WHAT IS CLAIMED IS:

1. A method of manufacturing a thin film transistor, comprising:

preparing a substrate and a mixed solution, the mixed solution having a reductant and a first metal;

forming a photoresist pattern on the substrate,

etching a portion of the substrate to form a groove using the photoresist pattern as a mask;

depositing a second metal on the substrate, a height of the second metal being smaller than a depth of the groove;

removing the photoresist pattern on the substrate and the second metal on the photoresist other than in the groove; and

forming the first metal on the second metal in the groove by submerging the substrate in the mixed solution.

- 2. The method of claim 1, wherein the first metal is a copper (Cu).
- 3. The method of claim 2, wherein the mixed solution includes a sulfuric acid (H_2SO_4) and a cupric sulfate $(CuSO_4 5H_20)$.

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- 4. The method of claim 3, wherein the reductant is one of a formaldehyde (HCHO), a hydrazine, a sodium phosphate (NaH₂PO₂), a sodium borate (NaBH₄), and a dimethyl amine borane (DMAB).
- 5. The method of claim 1, wherein the first metal is a silver (Ag).
- 6. The method of claim 5, wherein the mixed solution includes a silver nitrate (AgNO₃), an ammonium hydroxide (NH₄OH), and a sodium hydroxide (NaOH).
- 7. The method of claim 6, wherein the reductant is one of a formaldehyde, a hydrazine and a glucose.
- 8. The method of claim 1, wherein the first metal is a gold (Au).
- 9. The method of claim 8, wherein the mixed solution includes a gold chloride (AuCl₂), a sodium chloride (NaCl), and water (H₂O).

The method of claim 9, wherein the reductant is one of a formaldehyde, a glucose, a 10. sodium phosphate (NaH₂PO₂), and a N-N-dimethyl glycine sodium.

The method of claim 1, wherein the second metal is one of Pd, Pt, Au, Cu, Mo Cr, Ti, 11. Ni, W and Co.

12 The method of claim 1, further comprising:

forming a first insulating layer over the substrate to cover the first metal;

forming a semiconductor layer on the first insulating layer;

forming source and drain electrodes on the semiconductor layer;

forming a second insulating layer over the whole substrate covering the source and drain electrode, the second insulating layer including a contact hole on a portion of the drain electrode; and

forming a pixel electrode on the second insulating layer, the pixel electrode electrically connecting with the drain electrode through the contact hole.

The method of claim 12, wherein the first metal is a gate electrode. 13.

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